

a semisolidified metal-producing mechanism provided with a vessel for accommodating a predetermined amount of said molten metal therein, for agitating said molten metal in said vessel to give a predetermined slurry state by using a cooling member to obtain semisolidified metal;

a cooling member-restoring mechanism arranged adjacent to said semisolidified metal-producing mechanism, for applying a restoring treatment so that said cooling member has a desired function;

a forming mechanism for forming said semisolidified metal to have a predetermined shape; and

an articulated robot capable of transporting said vessel to said holding furnace, said semisolidified metal-producing mechanism, and said forming mechanism, wherein:

said articulated robot is arranged to be linearly movable back and forth between said holding furnace and said forming mechanism;

a plurality of sets of said semisolidified metal-producing mechanisms and said cooling member-restoring mechanisms are arranged along a direction of back and forth movement of said articulated robot; and

each of said cooling member-restoring mechanisms comprises transport means to which said cooling member is detachably attached and which is capable of gripping and successively transporting said cooling member through respective restoring treatment stations.

92 4. (Amended) The apparatus for producing a metal formed product according to claim 1, wherein said cooling member-restoring mechanism includes:

cooling means for applying a cooling treatment to said cooling member;

solidified matter-removing means for removing solidified matter adhered to a surface of said cooling member;

coating means for coating said cooling member with a ceramic material; and

drying means for applying a drying treatment to said cooling member,

wherein said transport means successively transports said cooling member to said cooling means, said solidified matter-removing means, said coating means, and said drying means.

5. (Amended) The apparatus for producing a metal formed product according to claim 1, further comprising a vessel-restoring mechanism arranged adjacent to said holding furnace and said semisolidified metal-producing mechanism, for applying a restoring treatment for removing adhered metallic matter from said vessel and for resurfacing said vessel.

93 12. (Amended) The apparatus for producing a metal formed product according to claim 1, wherein said forming mechanism comprises an injection sleeve for introducing said semisolidified metal thereinto, wherein:

said vessel is designed to have substantially the same opening shape as a shape of an opening of said injection sleeve for introducing said semisolidified metal; and

93 a gripping engaging section, with which a gripping mechanism of said articulated robot is engageable, is provided at only one side surface of said vessel.

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94 14. (Amended) The apparatus for producing a metal formed product according to claim 1, wherein:

said articulated robot includes a gripping mechanism which is engageable with a gripping engaging section provided at only one side surface of said vessel, said gripping mechanism comprising:

first clamp means for directly gripping said gripping engaging section; and

second clamp means for gripping said first clamp means gripping said gripping engaging section, integrally with said vessel.

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95 15. (Amended) The apparatus for producing a metal formed product according to claim 1, wherein said forming mechanism comprises an injection sleeve for introducing said semisolidified metal thereinto, said metal formed product being produced by introducing a solid-liquid co-existing metal into said injection sleeve through an opening of said injection sleeve to produce said metal formed product, said apparatus further comprising:

guide means which is engageable with said opening by making movement back and forth from a position over said opening of said injection sleeve and which is capable of guiding said solid-liquid co-existing metal to said opening; and

cover means which is capable of closing said opening by covering said opening of said injection sleeve from an upward position.

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21. (Amended) The apparatus for producing a metal formed product according to claim 1, wherein said forming mechanism comprises:

an injection sleeve for introducing said semisolidified metal thereinto, said metal formed product being produced by introducing a solid-liquid co-existing metal into said injection sleeve through an opening of said injection sleeve which communicates with a cavity, said apparatus further comprising:

a plunger for charging said solid-liquid co-existing metal in said injection sleeve into said cavity; and

a cooling medium-jetting mechanism for jetting a cooling medium toward said solid-liquid co-existing metal through said opening.

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